

VciI2cInterface

1) Functional Description

This VCI target is an I2C controller. This hardware component saves in its FIFO all requests then handles them to be transmitted via I2C bus successively. The slave's address is defined by a base address (I2C controller address on VCI bus) and a size (number of slaves). The I2C controller send an interruption to the processor to inform that data collected from I2C bus is ready. The segments allocated to a given instance of this component are defined in the [Mapping Table](#).

2) Component definition & usage

source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/metadata/vci_i2c.sd

See [SoclibCc/VciParameters](#)

```
Uses( 'vci_i2c', **vci_parameters )
```

3) CABA Implementation

CABA sources

- interface :
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/vci_i2c_interface.h
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/i2c_control.h
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/i2c_genrator.h
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/i2c_lib.h
- implementation :
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/vci_i2c_interface.cpp
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/i2c_control.cpp
source:trunk/soclib/soclib/module/internal_component/vci_i2c/caba/source/include/i2c_genrator.cpp

CABA Constructor parameters

- VciI2cInterface

```
VciI2cInterface(  
    sc_module_name insname,           // Component Name  
    const soclib::common::IntTab & index, // Target Index  
    const soclib::common::MappingTable &mt, // Mapping Table  
    int PW);                          // Pulse's Width (SCL)
```

CABA Ports

- sc_in<bool> **p_resetn** : System reset
- sc_in<bool> **p_clk** : System clock
- sc_out<bool> **p_irq** : Interrupts port
- sc_out<bool> **p_full** : FIFO is full

- `sc_in<bool> p_sdai` : Serial Data in
 - `sc_in<bool> p_scli` : Serial Clock in
 - `sc_out<bool> p_sdao` : Serial Data out
 - `sc_out<bool> p_sclo` : Serial Clock out
-
- `soclib::caba::VciTarget<vci_param> p_vci` : The VCI port

4) TLM-T Implementation

The TLM-T implementation is not available.